Abstracts

A comparison of topologies for single-ended millimeter-wave monolithic amplifier design

S. Nam, S. Miya, M. Ozaki and I.D. Robertson. "A comparison of topologies for single-ended millimeter-wave monolithic amplifier design." 1998 MTT-S International Microwave Symposium Digest 98.2 (1998 Vol. II [MWSYM]): 677-680.

The performance of five key single-ended monolithic millimetre wave amplifier topologies is compared with design, fabrication and measurements. This is the first such extensive comparative study of the special problems encountered when designing millimetre-wave amplifiers. The five different circuit topologies have been applied to the design of two-stage amplifiers using the same AlGaAs-GaInP PHEMT foundry process in order to arrive at meaningful conclusions. The topologies included are the reactive matching technique, voltage shunt feedback, series feedback, lossy matching and a resonator type topology. Each one has shown its distinctive behaviour at millimetre-wave frequencies. The comparison has been performed with simulations and verified through measurements.

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